Instructions for Records Spreadsheet

Tracking the Usage of Chemicals for Regulatory Compliance or Internal Record Keeping

Introduction

RECORDS is a spreadsheet designed as a tool to track the usage of chemicals in mixtures for regulatory compliance or a company's own internal record keeping system. The user enters mixture usage data (in gallons) on either a daily or monthly basis. The spreadsheet will calculate the total monthly usage (in pounds) of the chemicals contained in the mixtures. RECORDS will track up to 30 mixtures and 25 chemicals for twelve months, and calculate annual use amounts.

Although RECORDS can be used as a stand-alone program for chemical use tracking, manufacturers with coating operations will find it particularly useful in conjunction with RUNVOC, a computer program developed by the Office of Technical Assistance to help manufacturers easily and accurately determine the pounds of VOC per gallon of solids applied. This program performs the VOC calculation and provides all other information required to complete an SFP-1 form required by the Massachusetts Department of Environmental Protection to comply with air permit regulations. In addition, RUNVOC can be used before switching to a new coating formulation to determine whether the new coating will meet the VOC emission standards for compliance.

To use RECORDS, the user must have some familiarity with Windows-based spreadsheet programs. If you find you need a spreadsheet that allows for tracking a larger number of chemicals or mixtures, contact the Office of Technical Assistance for help at 617-626-1060.

Hardware/Software Requirements

RECORDS is available in Microsoft Excel version 4.0 or higher, Lotus 123 version 5.0 or higher, and QuattroPro version 6.0 or higher. It is important that the user have some familiarity with using a spreadsheet program. A copy of the original spreadsheet should be maintained to accommodate data for future years. Because of the size of the RECORDS file (Excel 1.10 MB, Lotus 1.27 MB, Quattro Pro 1.73 MB), the working copy should be saved and operated from the hard drive.

How to Use the RECORDS Spreadsheet

The spreadsheet is comprised of six sheets with the following names: Chemicals, Properties, Daily Usage, Monthly Usage, Results, and Calculations. The sheet name is indicated on the sheet "tabs" located either at the top (in Lotus) or bottom (in Excel and QuattroPro) left corner of the screen. The user can navigate among the sheets by moving the mouse to the desired sheet and clicking the mouse once. Each sheet is described in detail below:

SHEET 1: "CHEMICALS"

The "Chemicals" sheet contains the names of the mixtures and chemicals to be tracked. The user enters the names of the mixtures to be tracked in Column A. There should not be any empty spaces between the mixture names. Mixtures can be any chemical product or raw material used at the facility. Examples include paints, inks, pellets, and cleaning solvents. The user then enters the chemical components of the mixtures to be tracked in Column B. Many mixtures may contain more than one chemical and may have several chemical components in common with other mixtures.

IMPORTANT NOTE: There is no direct relationship between Columns A and B. These are simply a list of all the mixtures you want to track (Column A) and a list of the chemical components of all the mixtures (Column B). Therefore, the chemical components in Column B do not have to be listed in any particular order, do not have to be entered in the same row as the mixture in which they are contained, and should be entered only once, even if they are components of more than one mixture. The CAS# entered in Column C must be entered in the same row as the chemical name to which it corresponds. The user may enter the CAS# in Column C or may leave this column blank.

Note: To track total VOC usage enter "Total VOCs" in Column B and leave the CAS # blank. Total VOC usage may be tracked either in addition to or in lieu of tracking individual volatile chemicals (e.g. toluene, xylene, etc.).

Once the mixtures and chemicals to be tracked have been entered on the "Chemicals" sheet, they should NOT BE REARRANGED OR DELETED. The mixtures and chemicals listed on this sheet establish the row and column headings for subsequent sheets. If the original order of the mixtures and chemicals is changed after the properties and usage data has been entered, then the properties and usages will be listed under the wrong headings and will cause errors in the "Results" sheet.

SHEET 2: "PROPERTIES"

The properties of each mixture are entered on the "Properties" sheet. The user enters the density of each mixture in pounds per gallon as well as the percent by weight of each chemical in each mixture. If a mixture does not contain a particular chemical, the percent by weight cell may be left blank or a zero may be entered. The density of the mixture and the percent by weight of each chemical are usually indicated on Material Safety Data Sheets (MSDS).

Paint mixtures may be tracked either "as applied" (i.e. including resin, catalyst and thinner together) or "as purchased" (resin, catalyst and thinner separate) depending on applicable regulatory requirements. To track the "as applied" usage, be sure to enter the density of the "as applied" coating and the % by weight of each chemical in the mixture "as applied." These values may be obtained from OTA's program RUNVOC. Please note that to track total VOCs of mixtures "as applied," the % by weight of total VOCs must be calculated by adding the % by weight of each volatile chemical from the RUNVOC output.

IMPORTANT NOTE: If you have chosen to track "Total VOCs" as well as individual VOCs please be aware that on the "Properties" sheet each VOC will actually be accounted for twice -- once as part of the "Total VOCs" and once as an individual VOC. This will not result in the total usages being doubled, rather it will result in usages being expressed in two ways (i.e. as a total and as a breakdown of the total).

SHEET 3: "DAILY USAGE"

Mixtures may be tracked on a daily or monthly basis. Please note that the decision to keep daily or monthly records should be based largely upon the applicable regulatory requirements. The "Daily Usage" sheet is used to enter the usage data (in gallons) for the mixtures to be tracked daily. If all mixtures are tracked monthly, no data should be entered on this sheet. If some mixtures are to be tracked daily, then the user enters the month and year they begin keeping records. The spreadsheet will calculate the dates for the next twelve months beginning with the first of the month. Usage data cells may be left blank for all days prior to the start date.

SHEET 4: "MONTHLY USAGE"

The "Monthly Usage" sheet is used to enter usage data (in gallons) for mixtures to be tracked monthly. If all mixtures are tracked daily, then no data should be entered on this sheet. If some mixtures are tracked daily and others monthly, then the date may be left blank because the "Monthly Usage" sheet tracks data

for the same months as the "Daily Usage" sheet. If all mixtures are to be tracked monthly, then the user enters the month and year to begin keeping records.

Note: If you enter data for the same mixture on the "Daily Usage" sheet and the "Monthly Usage" sheet, the spreadsheet will use the data in the "Monthly Usage" sheet for the calculations.

SHEET 5: "RESULTS"
This sheet contains the monthly and annual usage totals for each chemical from all mixtures (in pounds). This sheet does not require any data input.

SHEET 6: "CALCULATIONS"
The calculation formulas are contained on the "Calculations" sheet. This sheet does not require any data input. The total monthly usage (in pounds) of each chemical is calculated as follows, for example:

*Total pounds of Chemical 1 used per month = [(Total monthly usage in gallons of Mixture A) * (Density of Mixture A in pounds per gallon) * (% by weight of Chemical 1 in Mixture A)/100]*

Making Changes to RECORDS
Once the mixtures and chemicals are entered into the spreadsheet, those cells are "formatted" and will remain formatted even if the mixture or chemical is deleted from the list. The calculation sheet contains formulas that look to see whether cells in the "Chemicals" sheet are blank. The spreadsheet will not recognize a cell that once contained data as "blank" unless the cell is cleared. The user can clear cells by putting the cursor on the cell to be cleared and selecting from the Edit Menu "Clear" and the"Contents" (Excel) or "Clear Values" (QuattroPro).

If you have questions or need assistance using this program, please contact the Massachusetts Office of Technical Assistance at (617) 626-1060. This program may be used for any purpose but may not be republished without acknowledgment to the source. The program is provided "as-is" without expressed or implied warranties. Because of the diversity of conditions under which this program may be used, it may not meet your requirements. OTA specifically requests that users forward any comments or suggestions concerning this program to this office so that we may continuously improve its utility and application.

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